IN THE CLAIMS:

Please cancel claims 1-21 without prejudice or disclaimer, and substitute new claims 22-42 therefor as follows:

Claims 1-21 (Cancelled).

22. (New) A tuneable grating assisted directional optical coupler to couple a transmission signal, comprising:

a first waveguide comprising a first core and a first cladding, said first waveguide having a first effective refractive index;

a second waveguide comprising a second core and a second cladding, said second waveguide having a second effective refractive index (n_2), different from said first effective index (n_1), and being in substantially close proximity to said first waveguide in a predetermined region to provide coupling therebetween; and

a periodic perturbation positioned in said coupling region for causing said coupling to be wavelength selective for one given wavelength (λ_0) function of said first (n_1) and/or said second (n_2) effective refractive index;

said second cladding of said second waveguide comprising a tuneable material and said first cladding of said first waveguide comprising a non-tuneable material.

23. (New) The coupler according to claim 22, wherein said tuneable material has a refractive index (n_3; n_7) which can be varied upon variation of an external parameter.

24. (New) The coupler according to claim 23, wherein the tuneable material is variable with temperature and said tuneable material has a ratio $|\frac{\Delta n}{n}|$ between the variation Δn of the refractive index (n_3; n_7) and the refractive index (n_3; n_7) of said tuneable material not smaller than 10^{-2} for a temperature variation not greater than 100°C.

25. (New) The coupler according to claim 23, wherein the tuneable material is variable with an electric field and said tuneable material has a ratio $|\frac{\Delta n}{n}|$ between the variation Δn of the refractive index (n_3; n_7) and the refractive index (n_3; n_7) of said tuneable material not smaller than 10^{-2} for an electric field variation not greater than 1 V/μm.

26. (New) The coupler according to claim 23, wherein the refractive index (n_3; n_7) of said tuneable material is variable with temperature and said tuneable material has a thermo-optic coefficient $\left|\frac{dn}{dT}\right|$ greater than or equal to 10^{-4}/°C.

27. (New) The coupler according to claim 23, wherein said tuneable material variable with temperature is a polymer.

28. (New) The coupler according to claim 23, wherein the refractive index (n_3; n_7) of said tuneable material is variable with electric field and said tuneable material has an electro-optic coefficient ($|r|$) greater than or equal to 2.5 nm/V.

29. (New) The coupler according to claim 22, wherein said first and said second waveguides are vertically stacked on a substrate.

30. (New) The coupler according to claim 29, wherein said first waveguide is the lower waveguide, while said second waveguide is the upper waveguide.

31. (New) The coupler according to claim 22, wherein said first and/or said second core comprises silicon compound material.

32. (New) The coupler according to claim 22, wherein said first cladding of said first waveguide comprises silica glass.

33. (New) The coupler according to claim 22, wherein said given wavelength (λ_0) is 1530-1565 nm.

34. (New) The coupler according to claim 22, wherein said transmission signal carries a given number of optical channels having wavelengths comprising about 1530 to about 1565 nm.

35. (New) The coupler according to claim 22, wherein said periodic perturbation is a Bragg grating having a grating period (Λ) and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda\left(n_1 \pm n_2\right)$.

36. (New) The coupler according to claim 22, wherein said transmission signal is supplied to said first waveguide and a coupled signal of given wavelength (λ_0) is outputted by said second waveguide.

37. (New) The coupler according to claim 22, wherein said periodic perturbation is realised on the first waveguide.

38. (New) The coupler according to claim 37, wherein said periodic perturbation is realised on said first core of said first waveguide.

39. (New) The coupler according to claim 36, wherein said transmission signal and said coupled signal are contra-propagating and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda(n_1 + n_2)$.

40. (New) The coupler according to claim 36, wherein said transmission signal and said coupled signal are co-propagating and said given wavelength (λ_0) is given by $\lambda_0 = \Lambda(n_1 - n_2)$.

41. (New) The coupler according to claim 39, wherein said first and said second effective indices (n_1, n_2) satisfy the following equation:

$$n_2 - n_1 > 2n_1\left(\frac{\lambda_{max}}{\lambda_{min}} - 1\right).$$

42. (New) An add/drop optical device comprising one or more of the tuneable grating assisted directional optical couplers according to any one of claims 22-41.